

Appendix 3

Appendix 3. VWART calculations

High temperature VWART calculations with keep warm function active

Test carried out by RISE on March to May 2019  
 Manufacturer: Warmafloor Ltd; Model: Calefa V; Serial number: 1129; Year of manufacture: 2019  
 VWART calculation prepared by Henrik Persson of RISE on 17 June 2019

	VWART	Volume
DHW	14,6	24,06
Standby	40,6	39,90
Space Heating	40,1	43,37

Period	VWART	% Time
No Heating	30,8	92%
Heating	39,2	8%

<b>Overall</b>	<b>31</b>
----------------	-----------

	DHW Draw test results			Post DHW Draw (60 seconds)	
	Power (W)	Primary flow (m3/hr)	Return Temp(°C)	Primary flow (m3/hr)	Avg Return Temp(°C)
Low	10572	0,170	14,6	0,003	12,6
Medium	18630	0,303	14,4	0,001	13,4
High	23872	0,388	14,8	0,002	14,0

DHW Draw Volumes per annum		
kWh	Hours	Volume pa (m3)
729	68,96	11,722
297	15,94	4,830
444	18,60	7,216

Post DWH Draw Volumes per annum		
Events	Average duration (secs)	Volume pa (m3)
10000	30	0,250
660	75	0,014
300	145	0,024

Standby	Standby test results	
	Primary flow (m3/hr)	Return Temp(°C)
	0,005	40,6

Standby Volumes pa	
Hours	Volume pa (m3)
7 981	39,90

	Space Heating test results		
	Power (W)	Primary flow (m3/hr)	Return Temp(°C)
1kWp	969	0,029	39,8
2kWp	1841	0,055	40,0
4kWp	3838	0,115	40,3

Space Heating Volumes pa		
kWh pa	Hours	Volume pa (m3)
98	101,14	2,933
787	427,49	23,512
565	147,21	16,929